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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,550	09/10/2003	Allen L. Price	01573.001200	3271

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EXAMINER
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SALVATORE, LYNDIA

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/658,550

Applicant(s)

PRICE ET AL.

Examiner

Lynda M. Salvatore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment and accompanying remarks filed 8/10/05 have been fully considered and entered. Claims 1 and 7 have been amended as requested. Applicant's amendments are not found sufficient to overcome the prior art made of record and Applicant's arguments are not found persuasive of patentability for reasons set forth herein below.

### ***Election/Restrictions***

2. Applicant's election of Group I, claims 1-17 in the reply filed on 8/10/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Process claims 18-28 have been canceled as requested.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1,2,4-10,13,and 17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Coppage, Jr., US 5,660,913 in view of Thomas et al., US 2003/0022583 A1.

Applicant added the limitation of "batting" and argues that the prior art of Coppage does not teach a non-woven batting layer but rather unidirectional non-woven tow layers made from multi-filament tows placed or bonded with resin against the woven fabric layers. Applicant provided the Examiner with a definition of batting and asserts that the specification is directed to a non-woven layer prepared by needling and that the non-woven material is referred to in the specification as a "needled layer" or "batting material". In response, it is not clear from

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Applicant's specification and arguments if the non-woven layer is either a batting material, a needle-punched batting or a needled layer or if the needled layer is considered structurally equivalent to the "batting material". Typically, needling is used to convert batts or loose webs into coherent non-woven fabrics. However, it is not clear from Applicant's arguments what type of non-woven is intended (e.g., needled layer, batting layer or needlepunched batting). It is also noted that Applicant argues that the claimed non-woven is not unidirectional, however, it is respectfully pointed out that by Applicant's supplied definition, the batting is a carded material. It is well known in the textile art that carding aligns fibers in one direction. Thus, it appears that Applicant's arguments are not commensurate in scope with the claims. For purposes of examination, the Examiner will consider only the recited claim limitation of non-woven batting and the textile definition supplied therewith.

Thus, with specific regard to the batting limitation in claim 1, it is respectfully pointed out that Coppage teach a plurality of carded tow or felt layers made from fibers, yarns or filaments which may or may not be needle-punched (Column 5, 61-65). The Examiner interprets this disclosure to mean that the plurality of carded layers can be needle-punched together and then impregnated with a resin to form non-woven ply or the layers can be impregnated individually and stacked to form a ply. As such, it is the position of the Examiner that such a structure would inherently be bulky and would presently meet the recited limitation of providing at least one non-woven batting layer. In other words, the Examiner considers a plurality of layers consolidated to form a single unit sufficient to meet the limitation and definition of a non-woven batting. Moreover, since the ballistic fabric of Coppage is used to form garments it would be obvious to one of ordinary skill in the art to make the non-woven layers of Coppage such that

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they are somewhat bulky and thick to provide padding and/or comfort to the wearer. Applicant is invited to evidence otherwise.

Recall, the patent issued to Coppage teaches a ballistic composite fabric comprising inner and outer resin bonded non-woven layers and a middle woven fabric layer (Abstract). Coppage teaches that each individual layer is made up of several sub-layers (Abstract). Said inner and outer sub-layers comprise unidirectional ballistic fibers (Abstract). Said middle woven fabric layer also comprises a plurality of sub-layers comprising ballistic fibers (Abstract). With regard to the areal density limitations, Coppage teaches an areal density preferably less than about .9 pound per square foot and not more than .85 pound per square foot (Column 4, 13-25). With regard to the tensile modulus limitation, Coppage teaches a minimum tensile modulus of 500 grams per denier (Column 5, 35-40). With regard to the tenacity limitation, Coppage teaches at least 15 grams per denier (Column 5, 35-40). Coppage teaches employing polyethylene filaments to achieve said tensile modulus and tenacity values (Column 5, 34-40). With regard to the calendaring limitations, Coppage teaches calendaring the plurality of the woven sub-layers to flatten out the layers. Coppage specifically teaches that calendaring forces the fibers within the woven fabric into the spaces between the main bodies of the yarns. Coppage teaches calendaring increases the stopping power of the ballistic material (Column 3, 55-Column 4, 10).

Coppage does not specifically teach needle-punching the inner, middle, and outer sub-layers together, but does disclose that the inner and outer sub-layers are resin bonded. Thomas et al., on the other hand, teach a ballistic material comprising several layers consolidated together by needlepunching (Abstract and Section 0101). Thomas et al., teach that needlepunching holds the structure together without the use of chemical binders (Section 0104). In addition, Thomas et

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al., teach that needlepunching can reduce the fabric thickness while increasing the density (Section 0111). Increased density translates into increased fabric ballistic resistance (Section 0112).

Therefore, motivated by the desire to increase the ballistic resistance of a ballistic resistant fabric material, it would have been obvious to one having ordinary skill in the art at the time the invention was made to secure the sub-layers present in the inner, outer, and middle layers of the ballistic fabric material taught by Coppage with the needlepunching technique taught by Thomas et al.

With regard to the areal weight and thickness limitations, the combination of prior art does not specifically teach the claimed areal weight range or thicknesses, however, it is the position of the Examiner that it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize these parameters as a function of desired end use. For example it may be desirable to reduce the number of sub-layers to provide a thin lightweight ballistic fabric material for use in ballistic garments such as vests. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233

With regard to the backface signature recited in claim 5, the combination of prior art fails to specifically teach this property value however, the Examiner maintains that said property is inherent to the ballistic fabric material provided by the combination of Coppage in view of Thomas et al. Support for said presumption is found in the use of like materials such as ballistic non-woven and woven fabrics and the use of like processes such as needlepunching, which

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would provide for the claimed backface property. The burden is shifted to Applicant to evidence otherwise.

5. Claims 3,11,12, and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Coppage, Jr., US 5,660,913 in view of Thomas et al., US 2003/0022583 A1 as applied to claim 1 above and further in view of Bachner, Jr., US 6,266,819.

The above rejection from which claims 3,11,12 and 16 depend is maintained. Applicant argues that the Bachner does not teach fibers needled into the interstices of a woven fabric by needle-punching a batting layer and a woven layer together. This argument is not persuasive. Applicant has ~~set~~<sup>not</sup> claimed fibers needled into the interstices of a woven fabric. Thus, Applicant's arguments are not commensurate in scope with the claims.

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coppage, Jr., US 5,660,913 in view of Thomas et al., US 2003/0022583 A1 as applied to claim 7 above and further in view of Cordova et al., US 5,440,965.

The above rejection from which claims 14 and 15 depend is maintained. and Applicant has not presented any new arguments for which to consider.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynda M. Salvatore whose telephone number is 571-272-1482. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 29, 2005

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